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PTO/SB/21 (04-04)

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## TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/656,495
Filing Date	September 5, 2003
First Named Inventor	Steven Jeffrey Goldberg
Art Unit	2681
Examiner Name	David R. Hudspeth
Attorney Docket Number	I-2-0397.1US

Total Number of Pages in This Submission

### ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Certified Copy of Priority Document(s)	Remarks	
<input type="checkbox"/> Response to Missing Parts/Incomplete Application	Transmittal Form with Certificate of First Class Mailing; (1 pg.) Communication Re Favorable IPER by IPEA/US in Corresponding International Application (2 pgs.); and Copy of IPER including approved claims (7 pgs.).	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	John C. Donch Jr.	Reg. No. 43,593
Signature		
Date	February 22, 2005	

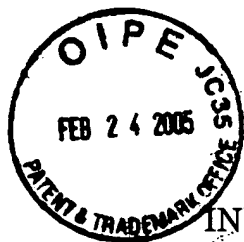
### CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	John C. Donch Jr.
Signature	
Date	February 22, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:

Steven Jeffrey Goldberg

**Application No.:** 10/656,495

**Confirmation No.:** 8356

**Filed:** September 5, 2003

**For:** VERTICAL DYNAMIC BEAM-  
FORMING

**Group:** 2681

**Examiner:** David R. Hudspeth

Our File: I-2-0448.1US

Date: February 22, 2005

**COMMUNICATION RE FAVORABLE IPER BY  
IPEA/US IN CORRESPONDING INTERNATIONAL APPLICATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This communication is to advise the Examiner of the favorable International Preliminary Examination Report (IPER) issued by the United States Patent and Trademark Office acting as International Preliminary Examination Authority in a corresponding international application. A copy of the IPER is enclosed.

The original PCT claims correspond to the claims in this U.S. application. A copy of the approved claims as published is also enclosed.

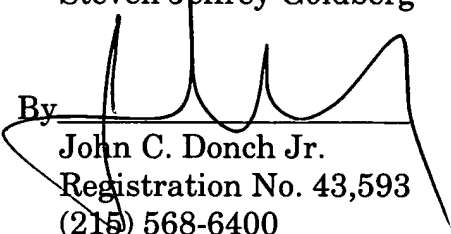
**Applicant:** Steven Jeffrey Goldberg  
**Application No.:** 10/656,495

In view of the fact that PCT claims 1-16 have all been found to meet the international standards of patentability, prompt examination and allowance are respectfully requested.

Respectfully submitted,

Steven Jeffrey Goldberg

By

  
John C. Donch Jr.  
Registration No. 43,593  
(215) 568-6400

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United Plaza, Suite 1600  
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JCD/dmr

Enclosures (2)

## PATENT COOPERATION TREATY

RECEIVED

AM/PM

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

OCT 12 2004

VOLPE & KOENIG, P.C.  
PCTNOTIFICATION OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

To:  
JOHN C. DONCH, JR.  
VOLPE AND KOENIG, P.C.  
UNITED PLAZA, SUITE 1600  
30 SOUTH 17TH STREET  
PHILADELPHIA, PA 19103Date of Mailing  
(day/month/year)

08 OCT 2004

Applicant's or agent's file reference

I-2-0397.1WO

## IMPORTANT NOTIFICATION

International application No.

PCT/US03/27900

International filing date (day/month/year)

08 September 2003 (08.09.2003)

Priority date (day/month/year)

09 September 2002 (09.09.2002)

Applicant

INTERDIGITAL TECHNOLOGY CORPORATION

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

Mail Stop PCT, Attn: IPEA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Raymond B. Persino

Telephone No. (703) 308-7528

Form PCT/IPEA/416 (July 1992)

DOCKETED FOR

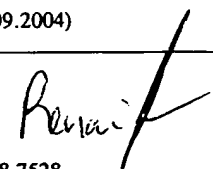
3/9/05 - PCT 30 MONTH DEADLINE

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference I-2-0397.1WO	<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <b>FOR FURTHER ACTION</b> </div> <div style="width: 60%;">           See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)         </div> </div>	
International application No. PCT/US03/27900	International filing date (day/month/year) 08 September 2003 (08.09.2003)	Priority date (day/month/year) 09 September 2002 (09.09.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): H04B 1/38; H04M 1/00 and US Cl.: 455/562.1; 342/372		
Applicant INTERDIGITAL TECHNOLOGY CORPORATION		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>    </u> sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>		
Date of submission of the demand 06 April 2004 (06.04.2004)	Date of completion of this report 30 September 2004 (30.09.2004)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Raymond B. Persino  Telephone No. (703) 308-7528	

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/27900

**I. Basis of the report****1. With regard to the elements of the international application:\***

the international application as originally filed.



the description:

pages 1-16 as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_.

the claims:

pages 17-19, as originally filedpages NONE, as amended (together with any statement) under Article 19pages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_.

the drawings:

pages 1-7, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_.

the sequence listing part of the description:

pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_.**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:



the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).



the language of publication of the international application (under Rule 48.3(b)).



the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

contained in the international application in printed form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**4. ☐ The amendments have resulted in the cancellation of:**the description, pages NONEthe claims, Nos. NONEthe drawings, sheets/fig NONE**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.  
PCT/US03/27900

**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. STATEMENT**

Novelty (N)	Claims 1-16	YES
	Claims NONE	NO
Inventive Step (IS)	Claims 1-16	YES
	Claims NONE	NO
Industrial Applicability (IA)	Claims 1-16	YES
	Claims NONE	NO

**2. CITATIONS AND EXPLANATIONS**

Claims 1-16 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest that claimed by the applicant.

Regarding claim 1, the applicant includes the subject matter of: a wireless communication system for transmitting and receiving wireless communications using at least one beam comprising: a plurality of WTRUs; at least one beam forming antenna wherein at least one beam emanating from the beam forming antenna may be adjusted in at least a vertical dimension; and a radio network controller for controlling the adjustment of the beam to optimize transmission between the antenna and at least one WTRU. The closest prior art, BARTHOLOMEW, does teach of "a controller" controlling the adjustment of the beam to optimize transmission between the antenna and at least one WTRU. However, BARTHOLOMEW does not teach that it is a "radio network controller" as the term is used in the art in the context of a UMTS network. Therefore, claim 1 comprises a unique combination of subject matter that is neither taught nor suggested by the prior art. Claims 2-10 depend on claim 1.

Regarding claim 11, the applicant includes the subject matter of: method for dynamically adjusting beams to optimize transmissions within a wireless communication system comprising: computing tilt information in real-time based on actual conditions in a wireless communication system; and adjusting at least one beam in at least a vertical dimension based on the computed tilt information. The closest prior art, BARTHOLOMEW, does teach computing tilt information based on a conditions in a wireless communication system; and adjusting at least one beam in at least a vertical dimension based on the computed tilt information. However, BARTHOLOMEW does not teach computing tilt information in real-time based on actual conditions. Therefore, claim 11 comprises a unique combination of subject matter that is neither taught nor suggested by the prior art. Claims 12-14 depend on claim 11.

Regarding claim 15, the applicant includes the subject matter of: a wireless communication system for transmitting and receiving wireless communications using at least one beam comprising: a plurality of WTRUs; a radio network controller; at least one beam forming antenna wherein a beam from the beam forming antenna may be adjusted in at least a vertical dimension; and a Node B for controlling the adjustment of the beam to optimize transmission between the antenna and at least one WTRU. The closest prior art, BARTHOLOMEW, does teach of "a controller" controlling the adjustment of the beam to optimize transmission between the antenna and at least one WTRU. However, BARTHOLOMEW does not teach that it is a "radio network controller" as the term is used in the art in the context of a UMTS network. Therefore, claim 15 comprises a unique combination of subject matter that is neither taught nor suggested by the prior art. Claim 16 depends on claim 15.

Claims 1-16 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----